
Excavations at Carthage

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When the Romans conquered Carthage in 146 B.C., two adjoining harbors—a military and a commercial one—served the Carthaginians. Appian gave this brief, but accurate, account of them in his *Roman History*.

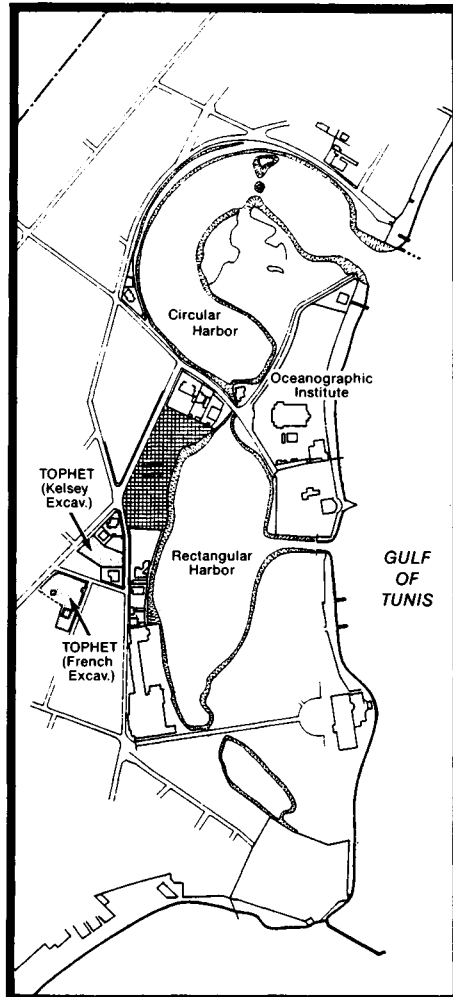
The harbors had communication with each other, and a common entrance from the sea seventy feet wide, which could be closed with iron chains. The first port was for merchant vessels, and here were collected all kinds of ships' tackle. Within the second port was an island, and great quays were set at intervals round both the harbor and the island. These embankments were full of shipyards which had capacity for 220 vessels (Book VIII, 96).

Two lagoons, now shallow and silted, proved to be relics of these ancient harbors. On the "island" in the northern lagoon British archeologists have discovered sloping ramps between rows of ashlar sandstone blocks. These undoubtedly formed the foundations for shipsheds used to drydock the naval fleet. Near the western edge of the southern lagoon our expedition has traced the line of an impressive quay wall also built with ashlar sandstone blocks. The wall and quayside form the western front of a large, water-filled basin, which it seems reasonable to identify with Appian's *emporion*, or commercial harbor.

The quay wall was remodeled after the Roman conquest along the same north-south line established in the Punic period. The harbor continued to be used by the Byzantines until ca. 650 A.D. In its last stages of repair the quay wall stood seven courses high, some 3.50 meters from the top of the wall to the bottom of the harbor. While classical sources give the impression that Carthage was utterly obliterated by the Romans (and there is sufficient archeological evidence for such destruction), there is also ample evidence—the quay wall being just one example—that the Romans made good use of foundations and overall urban alignments established in the Punic period. In all periods quayside structures conformed to the axis of the quay wall rather than to the grid pattern for Carthage, which also seems to have been adapted by the Romans from the Punic plan.

The Punic portion of the quay wall—the lower three courses—was made of yellow sandstone blocks. To build this wall under water, the ancient engineers must have used a technique of quay wall construction similar to that later advocated by the Roman architect Vitruvius. The builders probably cut a trench, ca. 1.50 meters deep, into the yellow virgin sand. They lined the trench with wooden coffer dams and pumped the trench dry before fitting the ashlar blocks neatly into place without benefit of mortar or hydraulic cement. In front of the quay wall the Carthaginians excavated tons of submarine sands to create a basin for the commercial harbor. Behind the quay wall they left the sand in place, nearly level with the top of the ashlars. This yellow sand was capped

*Map of the excavations
at Carthage*



with large thin slabs of white limestone which sloped downward toward the basin. This pavement probably facilitated quayside drainage over the wall into the harbor.

If the white sandstone slabs mark the surface of the Punic quayside and the three courses of yellow sandstone blocks reflect an original height of 1.75 meters for the Punic quay wall, then the seawater from the Gulf of Tunis that filled the basin was not much more than 1.50 meters deep. This would have provided sufficient draft for most ships of the period.

If, indeed, more extensive exposure of the Punic quayside indicates that we have discovered its original height, then the commercial harbor will provide dramatic evidence for the Mediterranean sea level having been ca. 0.75-1.00 meter lower in the 3rd-2nd centuries B.C. than it was in the Byzantine period. Water-laid sediments deposited against the upper courses of the quay wall in the 6th century A.D. indicate that sea level was then only 0.15 meter lower than it is today.

Prior to the construction of the military and commercial harbors, a nearly north-south channel was cut into the bedrock and virgin sand. It was 15-20 meters wide and filled with water ca. 1.50 meters deep. Portions of this channel have been excavated by the British team on what later became the island of the circular harbor. Marine mollusks indicate that the channel connected with the Gulf of Tunis. Its silts and clays were deposited by gently flowing currents. Small ships could have sailed through this waterway that passed just 30 meters east of the Tophet. Many of the large sandstone monuments that marked burial urns containing sacrificed infants were brought in by barge from Cap Bon and unloaded next to the Tophet. This season we rescued just such a monument (cippus) from the bottom of the channel. Pinned beneath it were parts of a wooden barge or raft.

Some time after 350 B.C., when the waterway had silted up and the sediments solidified, sandy fills for the quayside of the commercial harbor were spread over the channel. Unfortunately Punic pottery chronology for the late 4th-3rd centuries B.C. is too imprecise for pinpointing the period when the harbors were built. Within this time span we can only guess at what circumstances might have prompted the prodigious efforts of underwater excavation and elaborate construction that transformed the coastland along the Gulf of Tunis into a haven for military and commercial ships. Carthage and Rome were vying for control of the Western Mediterranean during much of the 3rd century B.C. It seems likely that just before the First or between the First and Second Punic Wars, the Carthaginians considered the need for protected ports worth the sizable expenditure of labor and money.

About 35 meters west of the Punic quay wall and 20 meters east of "Tanit 2" type cippi and stelae (many still standing *in situ* from Kelsey's excavations of 1925), we found a sharply defined trench, more than two meters wide, cut into bedrock along a north-south line. This cut probably formed a seating trench for a temenos wall setting off the eastern limits of the Tophet from the port facilities.

Although the stones of this wall have been robbed out, its foundation trench could be detected as it penetrated the lowest soil layers above bedrock. From this evidence I would suggest that the temenos wall was built some time in the 4th century B.C. Urn burials were numerous west of the wall but not one was found east of it.

Of the 180 urns that we have excavated during the past two seasons, nearly all were placed in small pits dug either into bedrock or layers of fill spread to level up the burial ground. By giving careful attention to the surface layers from which the urn pits were dug, we have been able to isolate at least five phases of interments with urns similar to those commonly called "Tanit 2" types.

From bottom to top, then, we have Tanit 2 phases a-e. Tanit 2a urns were set vertically into pits hewed out of the soft bedrock. A small mound of stones was placed over the mouth of the urn, sealing the pit. Only one 2a urn had the painted triglyph-metope design that Harden found characteristic of "Tanit 1" type urns buried in or on bedrock just twenty meters west of our excavations. He dated those to the 8th and early 7th centuries B.C. There are many similarities in form, if not in painted decoration, between our Tanit 2a and Harden's Tanit 1 burial urns buried in bedrock. Attic black-glazed sherds found associated with the thin orange layer of sand that marked the urn burials of our next oldest phase Tanit 2b and the minor distinctions in urn type for the five phases of urns excavated make it extremely difficult to date the bedrock urns much earlier than late 5th-early 4th centuries B.C. This late date is difficult to reconcile with an 8th century date for Tanit 1 or an early 7th century date for the beginning of Tanit 2. Could there have been a gap in bedrock burials within twenty meters of each other that lasted for over 300 years, with so little change in urn types over this time span?

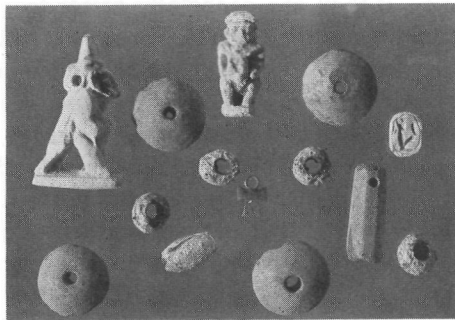
At this stage of investigation we must be cautious in extrapolations from one 20×5 meter trench for the whole of the Tophet. Indeed, broken pieces of a cippus provided the capstones for one of the bedrock urn burials, which suggests that at some earlier date somewhere else in the Tophet this cippus had first been used as a standing monument. Another indication that there were earlier burials elsewhere may be a limestone plaque found broken in layer 2b just above bedrock. This beautifully carved plaque shows an Egyptianizing figure with plaited wig (an Isis representation?), holding what may be a lotus flower above a damaged altar. This plaque may have been a limestone inset for a window in one of the sandstone cippi.

In the top three layers of Tanit 2 we have recovered clear evidence of cippi erected above some of the urn burials. The largest of these, like the one that sank in the 4th century B.C. channel, are associated with the last phase of Tanit 2. These large monuments appear side by side with the gabled limestone stelae sometimes inscribed. Four Siculo-Punic coins with galloping horse were found in 2e.

Some time after the appearance of Campana A wares the Tophet was leveled up with a series of colorful fills in preparation for the latest sacrificial burials, Tanit 3. The urns are small, undecorated, and nearly uniform in shape. The inscribed limestone stelae of Tanit 3 have acroteria flanking the gables. Because of Roman plundering and re-use of these monuments as building

Amulets and beads found as an offering in one of the cinerary urns of "Tanit 2"

"Tanit 2" type urns [upper levels] containing cremated infants and sometimes offerings of charred animal remains



stones, many more examples of this type have been found in the Circular Harbor structures than in the Tophet itself.

The contents of 40 of the 180 urns excavated have been analyzed in some detail. In most cases the charred remains of one or two children were found in each urn, ranging in age from premature/neonatal to 6 years. In single burials the average age was 1-3 years. Double interments included a premature/neonatal individual and a 2-3 year old. This latter category was frequent and is not easily explained. Presumably both children were from the same family. That the younger and older infants buried in a single urn were from the same parents gains support from the 2-3 year age interval between the children. This is the natural spacing interval.

Kleitarchos, writing in the 3rd century B.C., says: "out of reverence for Kronos [Baal-Hammon], the Phoenicians, and especially the Carthaginians, whenever they seek to obtain some great favor, vow one of their children, burning it as a sacrifice to the deity, if they are especially eager to gain success" (in *Scholia* to Plato's *Republic*, 337A). Perhaps it is in terms of the "vow" (*ndr*, commonly occurring on inscribed stelae) taken by the parents that we should attempt to interpret the double interments. In fulfillment of a vow for a favor granted by the deity, the parent pledges his next child; however, this child is born dead or dies before the time of offering (the premature/neonatal individual). To fulfill the vow the parent is obliged to sacrifice the youngest living offspring (the 2-3 year old child) as the acceptable response to the favor granted by the gods.

Whatever the true explanation of the double interments, they do seem to contradict the commonly expressed view that the sacrifice involved only first-born males. This traditional notion is based solely on the supposed connection between child sacrifice and the biblical "Law of the First-Born."

There is evidence of animal substitution being practiced by the 4th century B.C. at Carthage. In a few cases the charred remains of a young caprine (sheep or goat) were found alone in the urns. These are undoubtedly the remains of a special sacrifice known from the texts as the *mulk immer*. The faunal evidence suggests that either a young sheep or a young goat could be used as a substitute for a child.